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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,337	03/23/2001	Mats Cedervall	2466-92	4417

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EXAMINER

OMARY, NAWARA T

ART UNIT	PAPER NUMBER
2683	7

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/815,337

Applicant(s)

CEDERVALL ET AL.

Examiner

Nawara T. Omary

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4&5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hawkes (Patent #5,973,643).

In regard to Claims 1 and 12, Hawkes discloses a method of locating mobile stations within a mobile communication network including a plurality of mobile stations and a plurality of base stations, the method comprising the steps of: performing measurements on signals communicated between at least three base stations and at least two mobile stations (Fig. 1, items 1, 11, 2a, 2b, and 2c)(Abstract)(C3, L.14-25); and locating the at least two mobile stations simultaneously by minimizing a cost-function (C3, L.52-67)(C4, L.1-12, 16-25)(C5, L.8-17, L.59-63), which is achieved by means of a sufficient number of

equations, wherein each equation comprises the location of a mobile station as a function of the location of a base station and the performed signal measurements (C4, L.26-44)(C18, L. 54-67)(C19, L.1-67)(C20, L.1-25).

In regard to Claims 2 and 13, Hawkes discloses in his method that the performed signal measurements include the reception time of signals communicated between said at least three base stations and said at least two mobile stations (C11, L.52-64). The examiner equates the term of "reception time of signals" to be equivalent to "time of arrival of signals".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 8, 14, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkes (Patent #5,973,643) in view of Otten (Patent # 5,835,857).

In regard to Claims 3 and 14, Hawkes discloses the signal measurement method as in Claim 1. However, Hawkes fails to include in his method the Round Trip Time (RTT) of signals communicated between at least three base stations and at

least two mobile stations. Otten teaches in his modified system to include the RTT measurement of signals between such base stations and the mobile stations (C4, L.31-49). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to follow Otten on Hawkes in order to provide better means for position determination.

In regard to Claims 8 and 19, Otten further discloses in his modified method that a sufficient number of equations are based on the knowledge of said Round Trip Times (C4, L.31-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to follow Otten on Hawkes in order to further provide better means for position determination.

5. Claims 4-7, 9-11, 15-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkes (Patent #5,973,643) in view of Otten (Patent # 5,835,857) in further view of Fattouche (Patent #5,890,068).

In regard to Claims 4 and 15, the combined system of Hawkes and Otten does not include the locations of the mobile stations are defined by co-ordinates of predetermined dimensions. Fattouche teaches in his modified method the locations of the mobile stations are defined by co-ordinates of predetermined dimensions (C2, L.25-39). Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to further modify Hawke's method so as to include Fattouche's concept in order to in order to provide more precision.

In regard to Claims 5, 6, 16 and 17, Fattouche further discloses the method in which the locations of the mobile stations are defined by either two co-ordinates or by three co-ordinates (C6, L.13-17, L.64-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Hawke's method so as to include Fattouche's concept in order to provide a better positioning technique.

In regard to Claims 7 and 18, Fattouche also discloses the method, wherein said sufficient number of equations is based on said predetermined dimensions of the co-ordinates (C6, L.17-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Hawke's method so as to include Fattouche's concept in order to provide better estimation.

In regard to Claims 9 and 20, the method of Hawkes as modified in view of Otten disclose the number of simultaneously located mobile stations and the number of base stations being involved in said performed signal measurements are based on the knowledge of measured Round Trip Times (Otten:C4, L.32-65). However,

the modified method does not disclose explicitly that such measurements are also based upon pre-determined dimensions of co-ordinates defining the locations of the mobile stations. Fattouche teaches such concept as shown for Claim 7 (C6, L17-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Hawke's method so as to include Fattouche's concept in order to provide a better positioning technique.

In regard to Claims 10 and 21, Fattouche further discloses that signal measurements are performed close enough in time such that clocks in the base stations have not drifted significantly in relation to each other (C14, L.7-29)(C15, L.22-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Hawke's method so as to include Fattouche's concept in order to provide a better correlation.

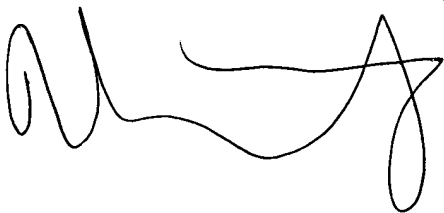
In regard to Claims 11 and 22, Fattouche discloses that signal measurements are performed within one minute (C16, L.45-48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Hawke's method so as to include Fattouche's timing in order to avoid delay.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nawara T. Omary whose telephone number is 703.305.6311. The examiner can normally be reached on 8:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703.308.5318. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.0377.

Nawara T. Omary



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

December 9, 2003